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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,218	02/14/2002	Thomas S. Kobayashi	SC11931TP	8301
23125 7590 07/09/2008 FREESCALE SEMICONDUCTOR, INC. LAW DEPARTMENT 7700 WEST PARKER LANE MD:TX32/PL02 AUSTIN, TX 78729				
EXAMINER FULK, STEVEN J				
ART UNIT 2891		PAPER NUMBER		
NOTIFICATION DATE 07/09/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Office Action Summary

Application No.

10/075,218

Applicant(s)

KOBAYASHI ET AL.

Examiner

STEVEN J. FULK

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9, 11-18, 20 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-17 is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 18, 20, 23 and 25 is/are rejected.
- 7) ☒ Claim(s) 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 16, 2008 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-9 , 18, 20 and 23-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1-9, 18 20 and 23-35 recite "wherein the passivation layer is not under a dielectric layer". However, the Specification and Drawings only disclose embodiments wherein the passivation layer (element 35 in the drawings) is under a polyimide layer (element 52). Polyimide is an insulating material, thus considered a dielectric. Therefore, the limitation "wherein the

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passivation layer is not under a dielectric layer" is not supported by the specification or drawings.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 25 recites "wherein forming the fuse further comprises forming the fuse in contact with an entire surface of the fuse". The limitation as written requires the fuse to be in contact with itself, and as such is indefinite.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 9, 18, 20, 23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Kono et al. '756.

Kono discloses a semiconductor device, comprising: a substrate (fig. 1, 102) having a first circuit formed therein (col. 6, lines 34-37; row decoder), a second circuit formed therein (column decoder), and a fuse (fig. 1, 130), wherein: the first circuit has a first contact area, the second circuit has a second contact area (fuse 130 connected at ports of row/column decoder); and the fuse, which may be selectively open-circuited, is formed overlying the passivation layer (fig. 1, 124), the fuse having a third contact area

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which is electrically coupled to the first contact area of the first circuit, and the fuse having a fourth contact area which is electrically coupled to the second contact area of the second circuit (col. 6, lines 34-37; fuse 130 connected at ports of row/column decoder), wherein the first contact area of the first circuit and the second contact area of the second circuit are no longer electrically connected if the fuse is open-circuited (col. 6, lines 37-38); a first interconnect for electrically connecting the first contact area to a first portion of the fuse; and a second interconnect for electrically connecting the second contact area to a second portion of the fuse (col. 6, lines 34-37; fuse 130 connected at ports of row/column decoder), a passivation layer (124) formed overlying at least a portion of the substrate, wherein the passivation layer is not under a dielectric layer (fig. 8, a portion of layer 124 is under fuse 130 and therefore not directly under the dielectric layer 230), and wherein the fuse is formed overlying and in contact with the passivation layer; and a packaging material formed in contact with over the fuse (col. 11, lines 33-39; fuse is opened and entire chip is packaged in resin, thus covering the exposed areas of the fuse show in fig. 1), wherein the packaging material is selected from the group consisting of a mold compound (resin) and an underfill; wherein the fuse is electrically connected to only the circuitry, and is not electrically connected to anything external to the circuitry (col. 6, lines 34-37; only electrically connected to the row/column decoder circuitry); wherein the first contact area of the first circuit and the second contact area of the second circuit are electrically connected only by way of the fuse (row/column decoder circuitry only connected by fuse); blowing the fuse before forming a packaging material (col. 11, lines 33-37), wherein the packaging material is formed on

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the fuse (col. 11, lines 37-39); and wherein a recessed area is formed in the passivation layer and wherein at least a portion of the fuse is formed in the recessed area (fig. 13, passivation 150; fuse formed in opening 152).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kono et al. '756 in view of Weber et al. '279.

Kono discloses all of the elements of the claim(s) as set forth in paragraph 7 above, but the reference does not explicitly disclose the fuse to comprise aluminum and a metal nitride having a thickness less than approximately 1 micron. Weber discloses a fuse comprising titanium nitride and aluminum (col. 2, lines 24-25 & col. 4, lines 22-24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the fuse material of Weber in the semiconductor device of Kono. One would have been motivated to do this in order to benefit from the novel properties of the fuse such as an adjustable resistance and easy manufacturing (Weber, col. 2, lines 7-12).

Response to Arguments

10. Applicant's arguments with respect to claims 1-7, 9, 18, 20, 23 and 25 have been fully considered but they are not persuasive. Applicant argues that Kono's dielectric

layer is not passivation layer because it is not the last dielectric layer on the device. However, Applicant's Specification and Drawings teach the passivation layer 35 is also not the last dielectric layer on the device, as layer 52, which is an insulator (considered a dielectric), covers passivation layer 35. Therefore the argument is not persuasive.

11. Applicant's arguments with respect to claims 11-17 have been fully considered and are persuasive. The rejection of claims 11-17 has been withdrawn.

Allowable Subject Matter

12. Claims 11-17 are allowed. Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is an examiner's statement of reasons for allowance: a search of the prior art failed to disclose or reasonably suggest a semiconductor device comprising a substrate, a passivation layer formed overlying at least a portion of the substrate, a fuse formed overlying the passivation layer, and a packaging material formed in contact with an entire length of the fuse, as recited by claims 11 and 24.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN J. FULK whose telephone number is (571)272-

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8323. The examiner can normally be reached on Monday through Friday, 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on (571) 272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven J. Fulk/
Primary Examiner, Art Unit 2891
July 2, 2008